CLAIMS

1. (Currently amended) A method for providing scalable reliable multicast service, comprising:

transmitting a group of data packets over a communication medium to a group of receivers designated by a multicast address; and

receiving over the communication medium from the group of receivers acknowledgement packets, each acknowledgement packet representing a failure by one of the receivers to receive a number of the data packets specified by the acknowledgement packet; wherein the communication medium is multiplexed between a first data link for transmitting packets to the receivers, and a second data link for receiving packets from the receivers, the first data link and the second data link each being provided a time period for data transmission of a predetermined duration before yielding the communication medium to the other data link.

2. (Currently amended) A method as in Claim 1, wherein the communication medium comprises a first data link for transmitting packets ~~from the sender~~ to the receivers, and a second data link for ~~transmitting~~ receiving packets from the receivers ~~to the sender~~.

3. (Original) A method as in Claim 1, wherein the communication medium is divided into time slots and wherein, during receiving, each time slot is assigned to the receivers for acknowledging a failure to receive a specified number of data packets.

4. (Original) A method as in Claim 3, wherein the specified number of data packets not received is implicitly specified by the position of each time slot.

5. (Original) A method as in Claim 4, wherein a collision detected during receiving in a time slot is deemed to be equivalent to receiving an acknowledgement packet in that time slot.

6. (Original) A method as in Claim 1, further comprising sending a control packet to the receivers specifying an allocation of the communication medium for transmitting the data packets and for the receivers to send the acknowledgement packets.

7. (Original) A method as in Claim 1, wherein the data packets include one or more forward error correcting parity packet (FEC) prepared in response to an acknowledgement packet received.

8. (Original) A method as in Claim 7, wherein the number of FEC parity packets prepared corresponds to the largest number of data packets failed to be received by a receiver, as indicated by the acknowledgement packets received.

9. (Original) A method as in Claim 7, further comprising storing the data packets and the FEC parity packets in a multicast buffer until a sufficient number of data packets and FEC parity packets are deemed received by the receivers.

10. (Original) A method as in Claim 1, further comprising transmitting one or more forward error correcting parity packet (FEC) proactively in anticipation of failure by the receivers to receive one or more of the data packets.

11. (Original) A method as in Claim 1, wherein the data packets include data packets of a plurality of multicast messages.

12. (Canceled)

13. (Currently amended) A method as in Claim [[12]] 1, wherein each time period is divided into a plurality of time slots.

14. (Currently amended) A method as in Claim 13, wherein the time slots in the first data link is allocated to the data packets of the multicast messages in a manner that gives preference to multicast messages being submitted for transmission ~~by sender~~ at earlier times.

15. (Original) A method as in Claim 14, wherein the data packets in one of the multicast messages comprise both data packets to be transmitted and forward error correction (FEC) parity packets.

16. (Original) A method as in Claim 15, further comprising determining the number of FEC parity packets to be sent based upon the highest number of failures to receive represented by the acknowledgement packets.

17. (Original) A method as in Claim 1, further comprising receiving a positive acknowledgement package from a selected one of the receivers.

18. (Currently amended) A method for providing scalable reliable multicast service, comprising:

receiving a group of data packets transmitted by a sender over a communication medium, the data packets being transmitted to a group of receivers designated by a multicast address; and

transmitting over the communication medium an acknowledgement packet representing a failure to receive a number of the data packets specified by the

acknowledgement packet; wherein the communication medium is multiplexed between a first data link for transmitting packets from the sender to the receivers, and a second data link for transmitting packets from the receivers to the sender, the first data link and the second data link each being provided a time period for data transmission of a predetermined duration before yielding the communication medium to the other data link.

19. (Original) A method as in Claim 18, wherein the communication medium comprises a first data link for transmitting packets from the sender to the receivers, and a second data link for transmitting packets from the receivers to the sender.

20. (Currently amended) A method as in Claim 18, wherein the communication medium is divided into time slots and wherein each time slot allocated for transmitting an acknowledgement packet[[s]] is shared by the receivers for acknowledging a failure to receive a specified number of data packets.

21. (Currently amended) A method as in Claim 20, wherein the specified number of data packets not received is implicitly specified by the position of ~~each~~ the time slot.

22. (Original) A method as in Claim 21, wherein a collision detected by the sender during a time slot in which an acknowledgement packet is transmitted is deemed to be equivalent to receiving an acknowledgement packet in that time slot.

23. (Original) A method as in Claim 18, further comprising receiving a control packet from the sender specifying an allocation of the communication medium for transmitting the data packets and for the receivers to send the acknowledgement packets.

24. (Original) A method as in Claim 18, wherein the data packets include one or

more forward error correcting parity packet (FEC) prepared in response to an acknowledgement packet received.

25. (Original) A method as in Claim 24, wherein the number of FEC parity packets expected to be received corresponds to the largest number of data packets failed to be received by a receiver, as indicated by the acknowledgement packets received.

26. (Original) A method as in Claim 24, further comprising storing the data packets and the FEC parity packets received in a multicast buffer until a sufficient number of data packets and FEC parity packets are received.

27. (Original) A method as in Claim 18, further comprising transmitting an acknowledgement packet proactively in anticipation of failure to receive one or more of the data packets.

28. (Original) A method as in Claim 18, wherein the data packets include data packets of a plurality of multicast messages.

29. (Canceled)

30 (Currently amended) A method as in Claim [[29]] 18, wherein each time period is divided into a plurality of time slots.

31. (Original) A method as in Claim 30, wherein the time slots in the first data link is allocated to the data packets of the multicast messages in a manner that gives preference to multicast messages being submitted for transmission by sender at earlier times.

32. (Original) A method as in Claim 31, wherein the data packets in one of the multicast messages comprise both data packets to be transmitted and forward error

correction (FEC) parity packets.

33. (Withdrawn) A media access control (MAC) module in a wireless receiver, the MAC module being interfaced to a physical layer receiver for receiving data packets and to a physical layer transmitter for sending data packets, wherein the data packets received comprise data packets of multicast messages, and wherein the data packets sent comprise acknowledgement packets, the MAC module comprising:

a detection module detecting errors in each of the data packets received;

a multicast buffer for storing the data packets received sorted according to multicast messages; and

an acknowledgement packet preparation module for preparing acknowledgement packets each indicating a specified number of data packets failed to be received into the wireless receiver.

34. (Withdrawn) A MAC module as in Claim 33, wherein the specified number of data packets failed to be received is specified implicitly by transmitting an acknowledgment packet at a pre-assigned time.

35. (Withdrawn) A MAC module as in Claim 33, further comprising a forward error correction (FEC) module for decoding FEC parity information in the data packets received.

36. (Withdrawn) A MAC module as in Claim 33, further comprising an output queue for passing verified data packets from the error detection module for processing by an upper layer protocol.

37. (Withdrawn) A MAC module as in Claim 33, further comprising an channel multiplexer for sharing the physical layer transmitter amongst data packets and the acknowledgement packets.

38. (Withdrawn) A MAC module as in Claim 33, further comprising a proactive protection module for providing the specified number of data packets failed to be received to be greater than the actual number of data packets failed to be received.

39. (Withdrawn) A media access control (MAC) module in a base station, the MAC module being interfaced to a physical layer receiver for receiving data packets and to a physical layer transmitter for sending data packets, wherein the data packets sent comprise data packets of multicast messages, and wherein the data packets received comprise acknowledgement packets from a plurality of receivers, the MAC module comprising:

a detection module detecting errors in each of the acknowledgement packets received;

a multicast buffer for storing the data packets to be sent sorted according to multicast messages; and

an acknowledgement packet processing module for preparing data packets to be sent in accordance with receiving an acknowledgement packet indicating a specified number of data packets failed to be received by one of the receivers.

40. (Withdrawn) A MAC module as in Claim 39, wherein the specified number of data packets failed to be received is specified implicitly by the time the acknowledgment packet is transmitted by one of the receivers.

41. (Withdrawn) A MAC module as in Claim 40, further comprising a forward error correction (FEC) module for preparing FEC parity packets for data recovery in response to the acknowledgement packet.

42. (Withdrawn) A MAC module as in Claim 39, further comprising an output queue for passing verified data packets from the error detection module for processing by an upper layer protocol.

43. (Withdrawn) A MAC module as in Claim 39, further comprising a channel assignment module for allocating the physical layer transmitter amongst data packets and the acknowledgement packets.

44. (Withdrawn) A MAC module as in Claim 41, further comprising a proactive protection module for providing a number of FEC parity packets greater than the actual number of data packets failed to be received.